forth in applicant's last response, dated October 5, 2000. Those standards will not be repeated herein.

Discussion of the References:

Matsunami, *et al.*, U.S. Patent No. 5,022,725 (Matsunami). The Matsunami reference discloses an optical sensor or radiometer for detecting an ambient light level. The sensor comprises a lens 5 and a light detector 6 that is provided with a transmitting window 7 and a sensing element 8. The sensor utilizes a light ray shielding section 9 located on the optical axis of the lens 5 and symmetrical with respect thereto. The shielding section 9 reduces the amount of light reaching the detector 6 that is incident at small angles with respect to the optical axis of the lens 5. This has the effect of increasing the sensitivity of the detector 6 to light that is incident at larger angles (e.g., 45°-90°) with respect to the optical axis. See, for example, Figure 12 of Matsunami. This compares with the response characteristic of a conventional radiometer illustrated in Figure 15. Matsunami's arrangement provides for more accurate sensing of an ambient light level in that the resulting output is not too heavily weighted toward light incident on the sensor at small angles, e.g., such as light from the sun if the sensor is pointed at the sky.

Thomson, U.S. Patent No. 3,825,747 (Thomson). This patent discloses a scanner having combined transmitting and receiving units. The scanner uses a single lens 14 to form the outgoing illumination or source beam and to focus the reflected or returned beam onto a sensor 16. In one embodiment, the lens 14 is positioned within a tube 12. The lens 14 is provided with a convex surface and a plane surface and is positioned within the tube 12 so that the plane surface faces the light source 10. The plane surface of lens 14 is provided with a disk 20, the forward-facing surface of which is reflective and the rearward-facing surface is opaque to light from the light source 10. The plane

surface of lens 14 is also provided with a forward reflecting surface 44. The arrangement is such that the light produced by the light source 10 is formed into the outgoing beam by the lens 14 and such that the return beam is twice passed through the lens 14 before being incident on the sensor 16. The disk 20, being opaque to the light produced by the light source 10, shields the sensor 16 from receiving light directly from the light source 10.

Argument:

Summary of Argument:

The Matsunami reference does not disclose an aperture stop positioned so that it is substantially co-planar with the image side focal plane of the lens. Since this limitation is not met, Matsunami cannot anticipate claims 1-3 and 7-9 under Section 102. With respect to claims 4-6 and 10-17, neither Matsunami nor Thomson provide the suggestion or incentive required to combine them in a manner that would make obvious claims 4-6 and 10-17.

Re The Rejections of Claims 1-3 and 7-9:

The examiner rejected claims 1-3 and 7-9 under 35 U.S.C. §102(b) as being anticipated by Matsunami. These rejections are improper in that Matsunami does not disclose an arrangement wherein the aperture stop is positioned so that it is substantially co-planar with the image side focal plane of the lens. Consequently, Matsunami cannot anticipate claims 1-3 and 7-9.

As discussed above, Matsunami discloses an optical sensor having reduced sensitivity along the optical axis of the lens. This arrangement reduces the sensitivity to light incident at small angles with respect to the optical axis while increasing the sensitivity of light incident at large angles. See, for example, Figure 12 of Matsunami. While Matsunami places a transmitting window 7 between the lens 5 and the optical sensor element 8, the transmitting window 7 is not positioned so that it is substantially co-planar with the image side focal plane of

the lens. In fact, the window 7 in the Matsunami device acts as a field stop, not an aperture stop. As is well-known in the optics field, a field stop limits the field of view of an optical system, whereas an aperture stop limits the amount of light that is allowed to enter the optical system. The aperture stop in Matsunami is effectively the diameter of the lens 5. Since Matsunami's aperture stop is in fact the lens 5 itself, Matsunami cannot meet the limitation of the currently pending claims that requires the aperture stop to be located so that it is substantially co-planar with the focal plane of the lens.

Each of the currently pending claims requires that the aperture be positioned so that it is substantially co-planar with the focal plane of the lens. Claims 1-3, 7, and 9 each recite this requirement specifically. Claim 8 uses different language but inherently includes the same limitation. That is, claim 8 requires a telecentric aperture stop means. However, by definition, a telecentric aperture stop is located so that it is substantially co-planar with the focal plane of the lens. See, for example, page 10, lines 17-27 of the present application:

> "The location of the aperture 46 at about the image side focal plane 48 of lens 36 makes the lens assembly 36 telecentric. Accordingly, the aperture 46 may be referred to herein in the alternative as a "telecentric aperture." As a result of the telecentric lens configuration, the cones of light 32 reflected by various illuminated field points 50 contained within the illuminated navigation area 28 on the object 16 remain relatively well-separated in the region between the object 16 and the front or object side surface 52 of lens assembly 36. See Figure 7."

Accordingly, the telecentric aperture stop means recited in claim 8 inherently includes the limitation that the aperture be positioned at about the image side focal plane of the lens.

In summation, Matsunami cannot anticipate claims 1-3 and 7-9 since Matsunami does not teach or suggest a limitation specifically contained in those claims. That is, the Matsunami reference does not teach or suggest positioning an aperture at

about the image side focal plane of the lens. While it is true that Matsunami does not specify the precise location of the window 7, Matsunami also does not specify that the window be located at about the focal plane of the lens. Vague or uncertain teachings of the prior art cannot support an anticipation rejection under Section 102. W.L. Gore & Assoc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983). Accordingly, claims 1-3 and 7-9 are allowable.

Re The Rejections of Claims 4-6 and 10-17:

The foregoing claims stand rejected under Section 103(a) as being as being obvious over either one of Matsunami or Thomson for the reasons set forth in the office action. The examiner's rejections are improper in that neither Matsunami nor Thomson provides the suggestion or incentive that is required to combine them in a manner that would make obvious the rejected claims. Therefore, neither reference can be used to support a valid obviousness rejection under Section 103.

The Matsunami reference teaches a sensor or radiometer having increased sensitivity to light that is incident on the detector at large angles with respect to the optical axis of the lens. Matsunami does not teach or suggest using a telecentric optical system to perform this function. In fact, nowhere does Matsunami use the term "telecentric" nor does Matsunami specify the location of the window with respect to the focal plane of the lens. Stated another way, the Matsunami reference does not teach or even suggest positioning an aperture so that it is substantially co-planar with the image side focal plane of the lens.

Another difference between the Matsunami device and that of the present invention is that the Matsunami device is not an imaging device. That is, the lens 5 of Matsunami does not form an image on the sensor 6. Instead, the lens 5 merely directs light onto the sensor 6 so that the sensor 6 can determine a total amount of light or radiation surrounding the lens.

Matsunami is interested in gathering light over a wide angle, i.e., ±90° from the optical axis of the lens 5. In contrast to Matsunami, the optical system of the present invention is an imaging device and forms an image on the detector. The image light of the present invention is also gathered over a considerably narrower field than is the case with the Matsunami device. That is, the present invention does not gather light over a range of ±90° from the optical axis of the lens.

The Thomson reference discloses a scanner having its own light source 10 for illuminating an object to be detected or scanned. Thomson arranges the optical system in such a manner that the light produced by the light source 10 is not directly incident on the detector 16. That is, the detector 16 is shielded form the light source 10. Thomson also does not disclose a telecentric optical system. While Thomson does disclose a window (not identified by a reference number) and an opaque material deposited on the lens to help shield the detector from light rays produced by the light source 10, neither element, nor Thomson's entire arrangement, provides the suggestion or incentive to rearrange them to form the optical system of the claimed invention. That is, the problems solved by the Thomson reference (i.e., that of providing a coaxial beam scanner wherein the sensor is shielded from receiving light directly from the light source) are so far removed from the problems solved by the present invention that a person having ordinary skill in the art would not view Thomson as having any particular relevance to the problems recognized and solved by the present invention.

With regard to the foregoing points, applicant reminds the examiner that most, if not all, inventions arise from a combination of old elements. In re Rouffet, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457 (Fed. Cir. 1998). Thus, every element of a claimed invention may often be found in the prior art. See id. However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. See id. Rather, to establish obviousness

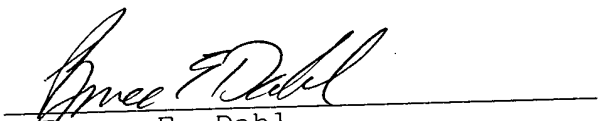
based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion, or teaching of the desirability of making the specific combination of the invention. See In re Dance, 160 F.3d 1339, 1343, 48 USPQ2d 1635, 1637 (Fed. Cir. 1998).

In utilizing either Matsunami, Thomson, or some combination thereof, to reject the claims the examiner has done what is expressly prohibited by law. That is, the examiner has used the currently pending claims as a template or guide to pick and choose from among the Matsunami and Thomson references only those elements that are contained in the claims without regard for what each reference fairly teaches to persons having ordinary skill in the art. Such an activity amounts to hindsight reconstruction and cannot be used in framing an obviousness rejection under Section 103.

Applicant believes that all the claims now pending in this patent application, as described above, are now allowable and that all other problems raised by the examiner have been rectified. Therefore, applicant respectfully requests the examiner to reconsider his rejections and to grant an early allowance. If any questions or issues remain to be resolved, the examiner is requested to contact the applicant's attorney at the telephone number listed below.

Respectfully submitted,

DAHL & OSTERLOTH, L.L.P.

By: 

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